Rewrite paragraph [0024] at page 9 as follows.

A2

**[0024]** Figure 1 illustrates a diagram of a cellular communications system 10 by way of a contemporary code division multiple access ("CDMA") example, in which the preferred embodiments operate. Within system 10 are shown two base stations BST1 and BST2. Each base station BST1 and BST2 includes a respective set of antennas $AT1_1$ through $AT1_n$ and $AT2_1$ through $AT2_n$ through which each may transmit or receive CDMA signals. The general area of intended reach of each base station defines a corresponding cell; thus, base station BST1 is intended to generally communicate with cellular devices within Cell 1, while base station BST2 is intended to generally communicate with cellular devices within Cell 2. Of course, some overlap between the communication reach of Cells 1 and 2 exists by design to support continuous communications should a communication station move from one cell to the other. Indeed, further in this regard, system 10 also includes a user station UST, which is shown in connection with a vehicle V to demonstrate that user station UST is mobile. In addition, by way of example user station UST includes a single antenna ATU for both transmitting and receiving cellular communications. Lastly, one skilled in the art should appreciate that system 10 and the preferred embodiments are applicable to various CDMA systems, including WCDMA systems.

Rewrite paragraph [0026] at page 9 as follows.

A3

**[0026]** Figure 2 illustrates a block diagram of a transmitter 12 according to the preferred embodiment and which may be used for either or both of base stations BST1 and BST2 in Figure 1. In various respects, transmitter 12 may be constructed according to principles known in the art, but as further detailed below such known aspects are improved as a whole due to advancements in the construction and operation as relating to symbol modulating block. Turning more specifically to transmitter 12, it receives information bits $B_i$ at an input to a channel encoder 14. Channel encoder 14 encodes the information bits

$B_i$ in an effort to improve raw bit error rate. Various encoding techniques may be used by channel encoder 14 and as applied to bits $B_i$, with examples including the use of convolutional code, block code, turbo code, or a combination of any of these codes. The encoded output of channel encoder 14 is coupled to the input of an interleaver 16. Interleaver 16 operates with respect to a block of encoded bits and shuffles the ordering of those bits so that the combination of this operation with the encoding by channel encoder 14 exploits the time diversity of the information. For example, one shuffling technique that may be performed by interleaver 16 is to receive bits in a matrix fashion such that bits are received into a matrix in a row-by-row fashion, and then those bits are output from the matrix to a symbol mapper 18 in a column-by-column fashion. Symbol mapper 18 then converts its input bits to symbols, designated generally as $S_i$. The converted symbols $S_i$ may take various forms, such as quadrature phase shift keying ("QPSK") symbols, binary phase shift keying ("BPSK") symbols, or quadrature amplitude modulation ("QAM") symbols. In any event, symbols $S_i$ may represent various information such as user data symbols, as well as pilot symbols and control symbols such as transmit power control ("TPC") symbols and rate information ("RI") symbols.

A3 Cont'd

Rewrite paragraph [0030] at page 12 as follows.

A4

**[0030]** The operation of transmitter 12 is now described. In response to receiving symbols $S_i$, each time reversed STTD encoder $22^1$ through $22^L$ first buffers a number of symbols, where preferably the symbols are grouped into blocks and the number of buffered blocks equals the number of transmit antennas. In the example of Figure 3, which has two transmit antennas $AT1_1$ and $AT1_2$, each time reversed STTD encoder $22^1$ through $22^L$ therefore buffers two blocks of symbols. For the sake of a simplified example, let $D^1$, as input to time reversed STTD encoder $22^1$, consist of the following two blocks, $D_1^1(1)$ and $D_1^1(2)$, of symbols, where the (n) designation of "1" or "2" indicates the advancement of time. For

further discussion, assume these blocks have the symbols in the time sequence shown in the following Equations 1 and 2:

A4 Cont

$$D_1^1(1)=\{\ S_1\ ,\ S_2\ ,\ S_3\ ,\ S_4\ \} \qquad \text{Equation 1}$$

$$D_1^1(2)=\{\ S_5\ ,\ S_6\ ,\ S_7\ ,\ S_8\ \} \qquad \text{Equation 2}$$

Thus, time reversed STTD encoder $22^1$ first buffers symbol blocks $D_1^1(1)$ and $D_1^1(2)$.

Rewrite paragraph [0044] at page 24 as follows.

A5

**[0044]** As an additional observation regarding block 1 equalizer $38_1$ and block 2 equalizer $38_2$, note that alternative embodiments may be created given the preceding recognition that both equalizers share the mutual matrix relating to $\Lambda_1$. For example, other standard receivers like MMSE equalizers could be altered to implement the mutual matrix benefit, including either those with or without feedback. For example, instead of multiplying a set of input signals times only $\Lambda_1^{-1}$, in an alternative embodiment additional factors may be implemented such as a multiplication times a matrix of $\left(\Lambda_1+\sigma^2 I\right)^{-1}$ as would be used to reduce mean square error. In such an instance, $\sigma^2$ is the variance of the AWGN noise and I is the identity matrix. Still other alternatives may be ascertained by one skilled in the art.